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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,683	10/22/2003	Michael W. Yang		5985

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EXAMINER

PARKER, FREDERICK JOHN

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 05/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/689,683

Applicant(s)

YANG, MICHAEL W.

Examiner

Frederick J. Parker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 21-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 24 and 25 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-20, 24,25, drawn to coating method, classified in class 427, subclass 256.
 - II. Claims 21-23, drawn to Bonding to form LCD, classified in class 156, subclass 60.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are entirely different methods, II requiring bonding and forming to make an LCD, I being a coating method for spacer particles without further assembly.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Michael Yang on 5/1/05 a provisional election was made without traverse to prosecute the invention of group I, claims 1-20,24,25. Affirmation of this election must be made by applicant in replying to this Office action. Claims 21-23 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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1. An examination of this application reveals that applicant is unfamiliar with patent prosecution procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skilled preparation and prosecution. The Office cannot aid in selecting an attorney or agent.

Applicant is advised of the availability of the publication "Attorneys and Agents Registered to Practice Before the U.S. Patent and Trademark Office." This publication is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Specification

2. A substitute specification or proper amendments in **proper idiomatic English** and in compliance with 37 CFR 1.52(a) and (b) is required. A substitute specification filed must be accompanied by a statement that it contains no new matter.

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

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4. The abstract of the disclosure is objected to because the last line referring to edge sealant is not germane to the abstract in view of the invention claimed. The abstract should also be corrected for idiomatic English and other errors. Correction is required. See MPEP § 608.01(b).

5. The use of the trademark TEFLON has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Objections

6. Claims 24-25 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from two sets of claims of different features or inventions. See MPEP § 608.01(n). Accordingly, the claims 24-25 is not been further treated on the merits. Upon amendment, if these claims depend on a non-elected claim, they will be withdrawn as being non-elected by original presentation.

7. Claims 1-20 are objected to because of the following informalities: In the claims, (1) **each claim must be written as a single sentence, ending with a period.** Two complete sentences can NOT make a step, see claim 2a, which is improper. (2) between steps or listed limitations, commas or other appropriate punctuation (but not periods) should be used. (3) the claims are replete with idiomatic English and spelling issues which must be corrected; for example but not limited to, “an UV”, (clm 1); “is comprising”, “An uniform” (clm 2); for each

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dependant claim, the preamble must begin something like "The method according to claim (number), further comprising" or other appropriate language. Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 1 is vague and indefinite because in a), the meaning of [or thermal]/ (or thermal) is unclear in context, e.g. is it intended or is it to be deleted? b) the claim is vague and indefinite because the meaning of the ambiguous phrase "certain amount" fails to convey the inventive amount of mixture; c) in b, the claim is vague and indefinite because the meaning of the ambiguous phrase "well finished" does not convey the intended nature of the cells; "spacer resin carrier" lacks antecedent basis IN THE CLAIMS; d)in c) the meaning of "forced spacer particle" is unclear; e) step d renders the claim is vague and indefinite because it cites a second smooth roller but not a first; f) in step e, "surface of a substrate" lacks antecedent basis; it is unclear what is and is not "conventional coating".
- Claim 2,12 are vague and indefinite because it is unclear if the particles are spherical or rod-like, or optionally can be those shapes.

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- Claim 3,13 are vague and indefinite because it is unclear if the additives can be additives, etc or optionally can include those limitations; the relative phrase “desirable properties” is unclear and lacks criteria.
- Claims 4,-6,8,12-14,18 are unclear because the indefinite terms “should” and “can” fail to set forth positive claim limitations; for examination, those terms will be taken to denote optional limitations when so worded.
- Claims 6 ,16,20 are vague and indefinite because the relative term “low” does not define the intended surface energy and the phrase would not be readily ascertainable by one skilled in the art.
- Claims 5,15,19 contain the trademark/trade name Teflon. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a polymer and, accordingly, the identification/description is indefinite.
- Claim 7 is vague and indefinite because claim 1b does not require holes.
- Claim 11 is vague and indefinite because in a), the meaning of [or thermal] is unclear in context, e.g. is it intended or is it to be deleted? b) the claim is vague and indefinite

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because the meaning of the ambiguous phrases “certain amount” and “channel-like” fail to convey the inventive amount of mixture or pattern type, respectively; c) in c, the claim is vague and indefinite because the meaning of the ambiguous phrase “forced correct amount” does not convey the intended amount; “channel” lacks antecedent basis IN THE CLAIMS; d) step d renders the claim is vague and indefinite because it cites a second smooth roller but not a first; e) in step e, “surface of a substrate” lacks antecedent basis; it is unclear what is and is not “any conventional coating”.

- Claim 17: “channel” lacks antecedent basis IN THE CLAIMS.
- Claims 9,10,19,20 are vague and indefinite because the relative term “thin” fails to define the thickness, and the meaning would be unascertainable to one skilled in the art.

- Claims 1-20 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The claim(s) are narrative in form and **replete with indefinite and functional or operational language**. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. **The claim(s) must be in one sentence form only.** Note the format of the claims in the patent(s) cited.

10. In view of the large number of objections and rejections, the Examiner will give claims reasonable interpretations based upon the specification and drawings.

Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 1,3,5,6,8-10 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 26,27,30-34 of copending Application No. US 10/310634. Although the conflicting claims are not identical, they are not patentably distinct from each other because instant claim 1 is the same as claim 26+31 of '634 except it would have been obvious to use printing means as the conventional coating means. Claims 2,3,5,6,8-10 are the same or obvious variants of 27,30,34,33/34, 31-34 of US'634, respectively.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. Claims 1,7,11,17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato US 4924243 in view of Hashimoto US 6583848.

Sato teaches to apply spacer pillars for an LCD using a gravure printing device comprising coating container 12 contacting engraved patterned roller 13, squeegee 15 adjacent thereof to remove excess coating, and printing roller 11 which receives the coating pattern and then transfers it to substrate 1 to form the spacing pillars. The liquid is a polymeric material, e.g. epoxy. The design engraved is not limited and would include a channel. While spacer particles are discussed separately in the reference (e.g. col. 1, 42-45), a mixture of polymer and spacer particles is not disclosed.

Hashimoto teaches forming an LCD in which it is taught on col. 4, 64- col. 5, 5, that spacers 3 (1-20 micron glass particles, inorganic particles, etc col. 5, 38-52) mixed with UV thermoset sealing resin, e.g. epoxy, may be applied to substrates by screen printing (EX 1); however, col. 5, 7-12 also teaches the equivalence of printing methods using a screen, shaped plate or roller (interpreted to include gravure roller), prior to transfer to a roller and then a substrate. Since Sato

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teaches gravure printing for spacers, and Hasimoto teaches applying sealant with spacers, the liquid polymeric materials of both references being the same or similar, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Sato by substituting the pillar material with the spacer-sealer composition as taught by Hashimoto to provide a simpler means of forming LCD's since the modified method carries out plural steps simultaneously.

As to claims 7,17; the size of the engraved openings and pattern would have been determined by the skilled artisan based upon the end-use application, in this case an LCD.

16. Claims 4-6,8-10,14-16,18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato US 4924243 in view of Hashimoto US 6583848 and further in view of Love US 4729310.

Sato and Hashimoto are cited for the same reasons previously discussed, which are incorporated herein. Applying a hydrophobic non-stick layer to the gravure roller is not cited.

Love teaches it is known to apply hydrophobic coatings to desired portions of such rollers to provide a desired image on the surface to which ink can be applied and transferred (col. 23, 45-62; col. 24, 19-24). While Teflon is not cited, it is the Examiner's position that Teflon would have been an obvious coating material choice, given its wide usage as a non-stick coating with hydrophobic properties.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Sato in view of Hashimoto by applying known hydrophobic

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layers to the gravure roller to ensure ink adhesion to portions of the roller so as to subsequently transfer a desired pattern to a substrate.

17. Claims 2,3,12,13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato US 4924243 in view of Hashimoto US 6583848 and further in view of Kitamura et al US 2002/0176046 (EFD 6/21/01).

Sato and Hashimoto are cited for the same reasons previously discussed, which are incorporated herein. Details of the liquid formulations are not cited. However, Kitamura teaches epoxy sealant compositions for LCD applications which comprise curing agents/initiators, inorganic filler, plasticizers, "other additives and the like (0099). Acrylates are taught, [0199]. The additional organics claimed by applicants are merely obvious variants, or as part of the envisioned formulations of Kitamura.

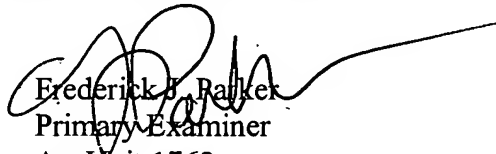
It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Sato in view of Hashimoto by incorporating the elements of the epoxy composition of Kitamura to form an effective sealant material for LCD devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick J. Parker whose telephone number is 571/ 272-1426. The examiner can normally be reached on Mon-Thur. 6:15am -3:45pm, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571/272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Frederick B. Barker
Primary Examiner
Art Unit 1762

fjp